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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,723	09/22/2003	Lawrence Carl Smith	2002B133/2	2436

23455 7590 03/13/2006

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EXAMINER

RABAGO, ROBERTO

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 03/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/668,723	Applicant(s) SMITH ET AL.	
	Examiner Roberto Rábago	Art Unit 1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-52 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/4/2006 has been entered.
2. The remarks of item 4 of the Office action mailed 8/26/2005 are withdrawn. Upon further review, it is noted that prior claims 3-5 should have been rejected over the same art as was cited in the prior rejection. The oversight is regretted.

### ***Claim Rejections - 35 USC § 102***

3. Claims 1, 2, 4-9, 11-20, 37, 38, 40, 41 and 43-52 are rejected under 35 U.S.C. 102(e) as being anticipated by Erickson et al. (US 6,426,394).

The reference discloses in Example 1, Samples 10-12, a method of mixing a slurry of metallocene in mineral oil with a cocatalyst in mineral oil, then combining the mixture with mineral oil, followed by injection of the mixture into a gas phase reactor for polymerization of propylene. Patentee has stated that the reactor shown in US 5,317,036 was used, with the reactor shown in Figure 1 clearly showing a conical vessel. The cited examples have not provided a measurement of the parameters

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claimed in claims 6, 9, 40, 41, 11-16, 43-48, 18-20 and 50. Regarding claims 16 and 48, the reference method would inherently result in a reduced viscosity stream because the carrier stream does not contain the metallocene slurry prior to mixing with the catalyst stream. Regarding properties of the mineral oil, the claimed values would be either inherent or immediately envisaged by those of ordinary skill in the art because both applicants and patentee appear to have used entirely conventional mineral oil, and applicants' claimed properties ranges are exceedingly broad. Regarding the claimed mass fractions of catalyst and oil components, those of ordinary skill in the art would immediately envisage the claimed ranges because applicants have set forth broad ranges of conventional values. Regarding claims 5 and 37, one of ordinary skill in the art using the reference process would necessarily have information regarding the rate of catalyst entering and leaving the catalyst reservoir, inherently meeting the "monitoring" and "measuring" limitations, because these features are nothing more than elementary process control. The "second vessel" of claims 5 and 37 is unlimited, and therefore this feature is met by the length of tubing connecting the catalyst tank with the mixing tee.

4. Claims 37, 38 and 40-52 are rejected under 35 U.S.C. 102(b) as being anticipated by Shamshoum et al. (US 6,239,058).

The reference describes a catalyst delivery and polymerization system in Figure 1, described at col. 10, lines 12-38, comprising tubes for delivering and mixing mineral oil (9), cocatalyst (11 and 12) and catalyst (14), followed by delivery to an propylene polymerization reactor. The catalyst is described as a metallocene catalyst supported

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on silica, and it is repeatedly stated that the supported metallocene is to be used as a suspension in mineral oil (col. 2, lines 19-21; col. 5, lines 11-25; col. 7, lines 59-61).

Therefore, it is clear that the catalyst for delivery through tube (14) is a supported metallocene in mineral oil. Although not specifically described, one of ordinary skill in the art would immediately envisage a mixing/feed reservoir vessel (of any description) prior to delivery through tube (14). The "second vessel" is unlimited, and therefore this feature is met by tube (14). One of ordinary skill in the art would furthermore immediately envisage monitoring the flow rate through tube (14) because this feature is nothing more than elementary process control. Regarding claim 48, the reference method would inherently result in a reduced viscosity stream because the carrier stream does not contain the metallocene slurry prior to mixing with the catalyst stream.

Regarding properties of the mineral oil, the claimed values would be either inherent or immediately envisaged by those of ordinary skill in the art because both applicants and patentee appear to have used entirely conventional mineral oil, and applicants' claimed properties ranges are exceedingly broad. Regarding the claimed mass fractions of catalyst and oil components, those of ordinary skill in the art would immediately envisage the claimed ranges because applicants have set forth broad ranges of conventional values. The reference catalyst has the required activity, as evidenced by the data of Table 1.

***Claim Rejections - 35 USC § 103***

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5. Claims 21-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Erickson et al. (US 6,426,394) in view of Brady et al. (US 5,317,036).

The reference discloses in Example 1, Samples 10-12, a method of mixing a slurry of metallocene in mineral oil with a cocatalyst in mineral oil, then combining the mixture with mineral oil, followed by injection of the mixture into a gas phase reactor for polymerization of propylene. Patentee has stated that the reactor shown in US 5,317,036 was used, with the reactor shown in Figure 1 clearly showing a conical vessel. Missing from the reference is disclosure of whether the metallocene in oil was prepared directly in catalyst reservoir tank **50**, or whether the mixture was made in another vessel, then transferred to tank **50** for use in the polymerization method. Those of ordinary skill in the art would view either method as equally likely and equally effective, and therefore said skilled worker would be motivated to mix the catalyst in a first vessel, then transfer it to tank **50** for use in the polymerization method. Said vessel could be of any arbitrary shape, including the conical shape shown in the '036 reactor system. Regarding claim 34, the reference method would inherently result in a reduced viscosity stream because the carrier stream does not contain the metallocene slurry prior to mixing with the catalyst stream. Regarding properties of the mineral oil, the claimed values would be either inherent or immediately envisaged by those of ordinary skill in the art because both applicants and patentee appear to have used entirely conventional mineral oil, and applicants' claimed properties ranges are exceedingly broad. Regarding the claimed mass fractions of catalyst and oil components, those of ordinary skill in the art would immediately envisage the claimed ranges because

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applicants have set forth broad ranges of conventional values. Regarding the limitation requiring measurement using a meter, one of ordinary skill in the art using the reference process would necessarily require basic process control information regarding the rate of catalyst entering and leaving the catalyst reservoir. The use of a meter would be immediately envisaged because fluid flow is measured using meters.

6. Claims 1, 2 and 5-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shamshoum et al. (US 6,239,058) in view of Brady et al. (US 5,317,036).

Shamshoum describes a catalyst delivery and polymerization system in Figure 1, described at col. 10, lines 12-38, comprising tubes for delivering and mixing mineral oil (9), cocatalyst (11 and 12) and catalyst (14), followed by delivery to an propylene polymerization reactor. The catalyst is described as a metallocene catalyst supported on silica, and it is repeatedly stated that the supported metallocene is to be used as a suspension in mineral oil (col. 2, lines 19-21; col. 5, lines 11-25; col. 7, lines 59-61). Therefore, it is clear that the catalyst for delivery through tube (14) is a supported metallocene in mineral oil. Although not specifically described, one of ordinary skill in the art would immediately envisage a mixing/feed reservoir vessel prior to delivery through tube (14). For guidance in selecting a vessel as a mixing/feed reservoir for the supported metallocene slurry, one of ordinary skill in the art would look to similar catalyst delivery systems, such as Brady. Brady describes a conical reservoir for containing a metallocene in oil for delivery to a propylene polymerization system, and therefore one of ordinary skill in the art would be motivated to use a conventional

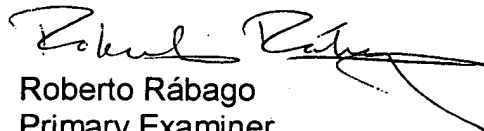
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reservoir, such as the type described in Brady, for use in the catalyst delivery system described in Shamshoum, with reasonable success expected.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberto Rábago whose telephone number is (571) 272-1109. The examiner can normally be reached on Monday - Friday from 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Roberto Rábago  
Primary Examiner  
Art Unit 1713

RR  
March 7, 2006